

The Official Newsletter of the Gwinnett Amateur Radio Society
January 2021 <http://www.gars.org/> Volume 30, Issue 1



The

GARzette



January 2021 GARS Meeting: NANO VNA by Lee Johnson N4WYE

GARS 2020 Ham of the Year: Dave Bruse W4DTR



The Georgia QSO Party



Online GARS meeting Tuesday, January 12, 2021 at 7:00 pm

President's Message

From the President...

Happy New Year 2021 and goodbye 2020. Looking back at 2020, we think about all the issues we faced and all the adjustments we had to make and think it was a rotten year that we don't want to repeat ever again. But when you really think about it, we survived because we were able to make adjustments and adapt. I can't wait until we can meet in person again, resume VE sessions and HamCrams, but we still got together with online meetings and enjoyed some great programs and workshops. We didn't go to Dayton, Huntsville and the Gwinnett Fairgrounds for Hamfests, but they will return. We will miss Techfest and going to Orlando early in the year, but some of us enjoyed new activities like Parks on the Air and spent more time on the air with Special Event stations and contests. We still got on the air!

The year ended with the encouraging news of a vaccine to combat this devastating virus. That will still take a few months to get everyone protected, but it's coming. There is a light ahead so let's look forward to resuming a more normal life in 2021.

We will start off the new year with GARS elections in our February meeting. Earl, AF4FG, was tasked with putting together a slate of proposed officers and he will introduce the slate in the January meeting. Don't forget that there is an opportunity to nominate others for the five elected



positions in the January and again in the February meetings before the vote is taken in February.

I'm anxious to hear if any GARS members were very good this year and Santa Claus brought some new radio gear under the tree. No new radios for me this Christmas, but I did add some accessories to the BuddiPole I purchased a few years ago to make it ready to take out for some portable or POTA activity. I'm also debating using a Gift Card or two for a new end fed dipole if I can figure out the real estate limitations in the yard. Be sure to post any new additions to the shack on GARS@groups.io.

I hope everyone stays safe. We just have a few more months to put up with this and can get back together for many fun Amateur Radio activities.

73,



WB4QDX, Club President



GARS Meetings & Workshops

GARS Meetings and Workshops

Will be held online until further notice. See <http://www.gars.org> for more information

GARS Virtual Login and Zoom Etiquette

Due to COVID-19 the following events are being held via Zoom video conferencing. Login info will be emailed via Groups.io. Subscribe at: <https://groups.io/g/GARS>

Workshops and Meetings are OPEN to all, feel free to share your invite with others.

- Workshops and Meetings will be **recorded**. By participating you consent to being **recorded**.
- Please change your display name to Your **FirstName CallSign**, e.g. **Hiram W1AW**
- [How to change Your Display Name in Zoom](#)
- Please stay muted until ready to speak. Your space bar works like a PTT for un-muting
- To be fair to everyone, there will be a three minute limit for each person during Q & A
- You may ask questions in chat; **please stay on topic while using chat.**

GARS Meetings Schedule (second Tuesday @ 7:00 PM):

- January 12, 2021 – [Lee Johnson N4WYE](#), NANO VNA (Vector Network Analyzer)
- February 09, 2021 – [John Kludt K7SYS](#), The 4-Year Amateur Radio Upgrade to ISS
- March 9, 2021 – [Neil Foster N4FN](#) – The Art of QSL'ing (or how I learned the hard way)

Workshop Schedule (third Tuesday @ 7:00 PM):

- January 19, 2021 – [Brian Haren W8BYH](#) – Georgia Amateur Radio Situation Awareness Map
- February 16, 2021 – [Lee Johnson N4WYE](#) Nano VNA (Vector Network Analyzer)
- March 16, 2021 – [Rich Donahue K0PIR](#) – (Topic TBD)

GARS Meeting – January 12, 2021

[Lee Johnson N4WYE](#) – NANO VNA (Vector Network Analyzer)

I have used the more sophisticated commercial Vector Network Analyzers during my career, and when I saw the early announcements of the NanoVNA, I knew that I had to have one if I wanted to construct and optimize HF antennas for my new IC-7300 without an external tuner. I found it very easy to construct and tune the 49:1 transformer needed for the End Fed Half Wave antennas. Optimizing multi-band HF antennas can be difficult, but with the NanoVNA, the job is much easier. I was able to get the SWR below 2:1 on all the bands, and the IC-7300 internal tuner handled the rest.

GARS Workshop – January 19, 2021

[Brian Haren W8BYH](#) Georgia Amateur Radio Situation Awareness Map

Brian has collected a ton of information about repeaters and other useful items throughout Georgia and has created a [website to present this information](#). If you use any of these **Amateur Radio repeater systems**; Analog FM, D-Star, C4FM, DMR, Winlink Gateways, Digipeaters, or Linked repeaters you will want to attend.

Brian will go through his trials and tribulations of getting accurate repeater info and the steps he took to create a database of repeater information. His maps are designed as tools to help Amateur Radio operators in the State of Georgia visualize emergency communication and emergency response infrastructure across the State. Over time Brian added more information layers to the map; NOAA weather radar, watches & warnings, emergency infrastructure (fire stations, hospitals, EOCs, shelters), traffic data, etc. that turned the map from a simple repeater map to a situational awareness tool.



The

GARzette

January 2021

Inside

President's Message	2
GARS Meetings & Workshops	3
GARS Happenings	5
Net Managers Corner	6
State QSO Party Challenge 2020	7
POTA Adventure	8
DMR – Codeplugs	9
Collins Gold Dust Twins	12
GARS Membership	16
GARS Meeting Minutes	18
Events – GARS and others	19
Active VE Testing Sessions	21
Local VE Sessions & Meetings	22
GARS Supporters	23

GARS Communication

<u>2 Meter Repeaters</u>	<u>6 Meter Repeater</u>
147.075(+) MHz Tone 82.5	53.110 (-1 MHz) No Tone (Offline for Maintenance)
147.255(+) MHz Tone 107.2	
<u>1.25 Meter Repeater</u>	Other Resources:
224.580(-) MHz Tone 100.0, 1.6 MHz Offset	<u>APRS</u>
<u>70 Cm Repeaters</u>	144.390 -- 1200 Baud W4GR
444.525(+) MHz Tone 82.5	<u>D-STAR</u>
442.100(+) MHz Tone 100	WD4STR
442.325(+) MHz Tone 100	145.060 + (1.4 MHz) 440.550 + (5 MHz)

**Don't forget
to support our
advertisers at the
back of the
GARzette.**

Snail Mail Address:
GARS
P.O. Box 492531
Lawrenceville, GA 30049

Notable Web Links

Ham Radio Glossary: <https://noji.com/hamradio/glossary.php> a very comprehensive listing provided by Noji Ratzlaff KNØJI. On his site there is also a lot of information about getting started in ham radio.

The *GARzette* is the official monthly newsletter of the Gwinnett Amateur Radio Society, serving its members and other persons interested in the advancement of the Amateur Radio art.

Original articles, art, and photos are invited and encouraged. Previously copyrighted submissions cannot be accepted for reprinting unless permission from the appropriate publisher is provided in writing along with the information being submitted. If reprints are from publications allowing their unrestricted use, please include a copy of the printed permission contained in the publication.

If possible, bring your articles to the monthly meeting in Microsoft Word or rich text (.rtf) or text or HTML format or by e-mail to editor@gars.org. Artwork can be accepted in most any graphics format and can be submitted via e-mail to the same address. Alternate means of submittal can be arranged when necessary.

In keeping with the Amateur Radio spirit, permission is hereby granted for the reproduction of The *GARzette* articles by other Amateur Radio club newsletters provided that proper credit is given to the individual author and *The GARzette*.

The GARzette is published each month with the assistance of Norm Schklar, WA4ZXV who prints copies for distribution at meetings, etc. and Dave Bruse, W4DTR, who distributes the newsletter electronically.

Deadline for submissions is the 28th of each month for inclusion in the following month's issue.

For additional information view our Website at: <http://www.gars.org>

Newsletter Email: editor@gars.org Editor: Bob Hoffman, K4CQO Assistant Editor: Bill Eggers, WB2RIS

**GARS HELP WANTED**

Speakers Needed for GARS Workshop Presentations, 3rd Tuesday of the month – Email workshop@gars.org to volunteer.

[PS— Articles to publish in the *GARzette*, either written by GARS members or published elsewhere, are always welcome. —Ed.]

GARS Happenings

20 Years ago in the January 2001 GARzette:

- Barry Zoll, N1TOQ became the GARzette editor
- The GARS Christmas party had home cooked food
- William Carter, KG4FXG provided a CW Mania article
- Barry Zoll, N1TOQ started a monthly "Hot Frequencies" article

You can always browse the GARzette archive at <http://www.gars.org/newsletters>
73, Bob, K4CQO, GARzette Editor



AMATEUR RADIO LICENSING CLASS TECHNICIAN LEVEL LICENSE (INTRODUCTORY LEVEL LICENSE)

JANUARY 9, 16 & 23, 2021

AMERICAN LEGION POST 294

3282 FLORENCE ROAD, POWDER SPRINGS, GA 30127

Students must attend all three classes. Classes are from 8:00 AM until 3:00 PM. There are no facilities for meals so you must bring your own or go out for lunch. We will take lunch from 11:00 AM to 12:00 NOON. There are restaurants nearby.

Students must register for the class. The ARRL Technician Manual will be used for the class. You can purchase the manual from the ARRL at www.arrl.org or from Amazon. You can also purchase the manual from Ham Radio Outlet, 6071 Buford Highway, Atlanta (about two miles North of I-285 on the right) or www.hamradio.com.

There is no fee for the class or for the FCC Exam at the conclusion of the class. **For more information or to register, please contact ELDEN MORRIS, N1MN at 770-713-4403 or by e-mail at N1MN@ATT.NET**

From Dave Slotter D3DJS:

I am pleased to announce that [HamPC 1.2b rc1](#) is now available for public download! This is a release candidate which has been tested by a small group of beta testers, and whose feedback was used to improve the quality of the image.

Direct Download Link: <https://sourceforge.net/projects/hampc/files/2020-12%20Release/>

If you run into issues, please post to the HamPC forum on <https://groups.io/g/HamPC/> first. If you see a bug (defect), please report it on the GitHub issues page at: <https://github.com/dslotter/HamPi/issues>



Net Managers Corner

Monday Night 2 Meter “Want, Swap, Sell, and Information Net”

GARS NEEDS MEMBERS TO SERVE AS NET CONTROL STATIONS!

GARS is a great Amateur Radio service club and we have the membership and awards to prove it. Our club is a very busy and active club and we use the Monday night net to get the information out to our members. Weekly participation is needed to make our net function well. There is only a small group of very dedicated people that make the net happen each week, and we need more members to volunteer to serve as Net Control Stations (NCS) on a rotating basis.

Out of almost 300 members, there are only SEVEN primary people who serve as NCS for the GARS net every Monday night. In no particular order, they are:

Don - KW4AL

Ray - N4GYN

Bill - KK4AUA

David - KA4KKF

Kevin - KK4WOG

Chuck - KK4TKJ

Russell - AB4QQ

As GARS Net Manager (Chuck KK4TKJ), I really need 26 people to fill NCS positions. I do plan and post the schedule months in advance. Any conditions will be accommodated that you as a rotating NCS need to place on the scheduling of your duties. If your plans change, I can make adjustments for the schedule to work, and I will make those changes happen as soon as I am notified of a problem. As Net Manager, I also send out reminders each week to let the NCS scheduled know he or she is NCS for the next Monday night net. In short, serving as a rotating NCS is a small duty but a great contribution to the club.

The “Want, Swap, Sell Information Net” begins promptly at 19:30 every Monday night and runs about 45 minutes. As a scheduled NCS, you will request the assistance of a volunteer alternate NCS each time you have Net Control. Your simple duties will be to tune in to the GARS repeater, read the script, take a few notes and forward the information to me for record keeping.

Please lend a hand and contact me at KK4TKJ@arrl.net. Sign up to help support the effort that makes GARS the great club that it is.

73 and see you on the Nets!

Chuck McCord, KK4TKJ

GARS Net Manager

State QSO Party Challenge 2020

By Bob Hensey, K4VBM

Well, the State QSO Party Challenge results are in for 2020 – the year of COVID that we all want to forget ASAP! For those of you that were not following or participating, the 2020 challenge was sponsored by ICOM this year. The annual State QSO Party Challenge recognizes all radio amateurs' participation in the U.S. State and Canadian Province QSO parties. It is open to any radio amateur who participates in any of the approved State QSO Parties (SQPs). Participants must simply submit their scores to 3830Scores.com to be included in the Challenge.

Participants are recognized for reaching five levels of achievement – Bronze, Silver, Gold, Platinum and Diamond.

This year, the annual competition was highlighted by the ARRL, and a hopeful outcome of the publicity was "... to be the catalyst to take state QSO party contesting to the next level."

As a yearly participant in various state and Canadian QSO parties, I had noticed falling participation (hey, I was actually able to be the overall winner of the 2019 Nebraska QSO party with just a little extra effort due to the lack of participation). This year, I noticed that there was a tremendous increase in QSO party activity – i.e., stations on the air actively participating – so I believe that the goal for this year was met. And because of the increased activity and competition, I was not able to repeat by winning a QSO party in 2020, but it was really nice to see and contact all the "extra" stations on the weekends throughout the year.

One of the reasons I participate in the various State and Canadian QSO parties, is that it allows me a medium to hone my operating skills, especially learning techniques for breaking through a pile-up, which comes in handy when you are trying to get that next elusive DXCC for your collection. This applies to Phone, CW, and digital modes. And as a newcomer to CW, I need all the help I can get, HI HI!

I know a lot of you did participate this year, so congratulations on your achievement and hope to see you all again next year. Don't forget to print out your certificates at <https://www.b4h.net/sqpchallenge> and hang them proudly! With the noticeable improvement in propagation recently, I am sure that 2021 will prove to be a fun and exciting year for ham radio.

To the right is my certificate for achieving 31st place overall, out of about 2100 operators, with my 100 watts and a couple of homemade antennas (G5RV dipole and 520 foot skyloop). See you all on the air, and hopefully we all soon will get our COVID vaccines, and things will get back to something resembling normal.



POTA Adventure

Bill Cherepy WB4WTN

I try to activate entities that have not been activated or have rarely been activated. So, on December 3, 2020 I decided to activate the Channels State Forest near Abingdon, Virginia K-5507 since it's only a 90 minute drive from where my daughter lives in Northeast Tennessee. It has only been activated once in April of 2019 by the husband and wife team of Ray KC3RW and Kerrie KB3WAV. Because they each used their own call signs it really counted as two activations.

As I drove towards the parking location indicated on the map I started to lose cell service intermittently and by the time I arrived at the location it was completely gone. There was a narrow mostly gravel road leading up into the forest so I decided to take it to see where it led. After going through an open gate the road began to climb and after about 10 minutes or so I reached a spot near the top where I could pull over and not block the road. A quick check revealed I had cell service so I was able to spot myself! According to an app on my iPhone I was at an altitude of 2,650 feet. The temperature never rose above 50 degrees, but I planned for the weather so I was comfortable the entire time. I setup and began operating and I operated for a total of 3 and a half hours.

The results were 117 contacts.

17M - 4 - one was to NL7V in Alaska

20M - 23 - one was to EI4IB in Ireland and one to CU3BL on Terceira Island in the Azores

40M - 76

60M - 8 (I really like making 60M contacts)

80M - 6

I probably could have made a few more, but I wanted to get down off the mountain before dark. Sunset at that latitude was at 5:12PM

The 117 contacts ties my all time high number of contacts.

Activating POTA entities is great fun and it's great to be on the other end of a pile-up for a change. If you would like to join the fun or would like more information, visit <https://parksontheair.com/>.

DMR – Codeplugs

An Article provided by Bob Hoffmann, K4CQO

This article uses a lot of the terms that were defined in the last month's GARzette entry "What is DMR". If the term does not make sense to you, take a refresher by rereading last month's GARzette.

There are two ways to get a codeplug on your radio – well maybe there are 3 if you consider the combination of the 2. If you can find a codeplug for your area that is for your radio, that is the easiest way to get started. The other way is to create your own codeplug from scratch. I am going to go over the steps to generate your own and these can be used to modify a codeplug.

Here are the steps that can be used (these are not the only ones, and not the only order, but these will work):

1. Enter your DMR ID
2. Define the Talk Groups (TGs)
3. Enter the Channels for the repeater frequency
4. Put the Channels in a Zone
5. Adding Digital Contacts

Enter your DMR ID

Each radio has a place to enter your DMR ID. It usually has a list that can be entered – but if the radio is only used by you, enter only one. Enter the DMR ID along with your call sign.

Defining the TGs

The TG list provides and defines the number that is used by the TG. Like Georgia State is listed as Talk Group 3113. Below is what that they are represented on the AnyTone D878 HT codeplug editor:

No.	TG/DMR ID	Call Alert	Name	Call Type
31	3113	None	Georgia	Group Call

The No. column is just the listing number, in this case it is my 31st entry. The TG/DMR ID is the TG number – for Georgia State it is 3113. I have this TG called Georgia and not Georgia State, but any name that you want to use is OK. I used "Georgia" because each state has a state wide TG, like 3112 is Florida, and 3115 is Hawaii. The list of TGs can be found at Brandmeister ([Brandmeister DMR Blog](http://www.brandmeister.info)) or at K4USD (www.k4usd.org). The Brandmeister TG list contains 1046 TGs. The K4USD TG list also contains the timeslot the is used for the repeater access (which is not used when entering the TGs, but is used for the Channel entries).

The Call Type defines whether the TG is used or a specific call to a user (entering a DMR ID instead of the TG number) which uses "Private Call" instead of "Group Call" for TGs. So for the listing of TGs, always use the Group Call designation.

The TG list is used to assign one of the TG entries to a channel entry. The TGs can be assigned to many channels – a channel is a connection to a repeater or hotspot, so there are lots of channels that are setup in your radio. Each TG that is available on a repeater or hotspot needs a channel assigned to that repeater / hotspot.

Setting up Channels

Channels are used for both analog and digital DMR connections. This is going to deal only with the digital channel setups.

The following information is entered for each connection that you want to have for your DMR radio. This means for each TG that you want to access when connected to repeater A, for each TG that you want to access when connected to repeater B, for each TG that you want to access when connected to a hotspot X, etc.

Each digital (analog too, but with different parameters) connection (being able to connect to a TG) to a

repeater needs to have the following information entered

- Channel Mode = Digital (versus Analog)
- Band Width = 12.5 kHz – this is the bandwidth of DMR channel and each timeslot has this bandwidth
- Power = This is setting that is used to adjust the power level that is put out by your radio. If your radio will be a far distance from a repeater, a higher level should be used. If you are using a hotspot, a low level should be used because the hotspot is at your location. This value is the same for all connections to the same repeater.
- Channel Name = This is the name to be used for the channel. Using repeater as a prefix to the TG name is a good choice, like “St Mtn Georgia” for the Stone Mountain repeater connection to TG 3113 Georgia, or “ST Mtn World” for the Stone Mountain repeater connection to TG 91 Worldwide.
- Tx and Rx Frequency = These are the transmit and receive frequencies of the radio – which are the reverse of the repeater. If the repeater uses 444.500 MHz transmit, that will be the receive frequency of the radio. I admit having them reversed more often than not – but it is easy to get them corrected.
- Admit Criteria = (also called TX Permit by Anytone) This is what is used to allow your radio to transmit on the channel. For repeaters, it is a best practice to use Color Code Free. This means that when anybody else is transmitting on the channel / TG that is using the same Color Code, you won’t be able to transmit – only when the connection is free. A built-in way to prevent pile-ups.

Admit Criteria settings meanings (from Jeffrey Kopcak, K8JTK programming a Codeplug website):

- Channel Free: the radio will only transmit when there is no transmission in progress on the time slot.
- Color Code (Free): the radio will only transmit when the time slot is free on the repeater matching the color code. This mode pings the repeater at the beginning of each transmission to find a matching color code. This pinging is also an indicator if you’re making it to the repeater or if it is in use.
- “Color Code (Free)” is recommended for a repeater, “Channel Free” for hotspot & simplex use.
- Contact Name = This is the TG name that is in the TG list
- Color Code = this is a value from 0 to 15 that ID defined by the repeater that you
- Repeater Slot = The repeater allows a TG connection on either timeslot 1 or timeslot 2 and you must be making the connection on the timeslot that the repeater is looking for the TG to be on.

There are other settings that can be made, but these are the ones that are the important ones and the ones that you have to specifically set to the right values. Some of the other values have default values and others are set based on the values that are set in other parameters. Below are some on the channels that are for Stone Mountain repeater (my codeplug settings for my Anytone D878):

Channel Name	Receive Freq	Transmit Freq	Power	Band Width	Contact	Call Type	TG	TX Permit	Color Code	Slot
STM ATL Metro	441.8125	446.8125	High	12.5K	ATL Metro K4USD	Group Call	8	Same Color Code	1	1
STM Georgia	441.8125	446.8125	High	12.5K	Georgia	Group Call	3113	Same Color Code	1	2
STM Local 2	441.8125	446.8125	High	12.5K	Local 2	Group Call	2	Same Color Code	1	2
STM Local 9	441.8125	446.8125	High	12.5K	Local 9	Group Call	9	Same Color Code	1	2

Channel Name	Receive Freq	Transmit Freq	Power	Band Width	Contact	Call Type	TG	TX Permit	Color Code	Slot
STM N Amer BM	441.8125	446.8125	High	12.5K	N America BM	Group Call	93	Same Color Code	1	2
STM N Amer DMARC	441.8125	446.8125	High	12.5K	N America DMARC	Group Call	3	Same Color Code	1	2

Setting up Zones

Zones are groupings of channels and a particular zone can be selected by the radio. From the Channel listing above, it makes sense to put all of the Stone Mountain repeater channels in a single Zone – and call it the Stone Mountain zone (or an abbreviation like Stn Mtn). If your radio is mobile – like my HT or any vehicle mounted radio – other repeater's channels can be placed in a zone. Then, when within the repeater's range, set the radio to that zone. The channels in the zone are usually able to be selected easily within the selected zone – the AnyTone D878 has a knob on top that selects channels in the zone as it is turned.

I have a zone for my hotspot – well I actually have 2 zones for my hotspot. One zone contains the TG channels defined within Georgia (I have 11 channels in that zone), and the other zone is for state wide TG channels, the TAC channels, and World Wide TG 91 thrown in (I have 79 channels in that zone).

Adding Digital Contacts

When the radio receives a signal from a TG, the signal contains the DMR ID of the person transmitting on the TG. The radio can display that DMR ID – which is a 7-8 digit number – and is not very friendly to figure out who that is. This is where having the Digital Contacts loading in the radio helps. The digital contacts contain the call sign, name, and registered location of the DMR ID. So when that person's signal is received, instead of seeing:

- 1234567

You see:

- K4CQO Bob Sugar Hill Georgia United States

The number of contacts that your radio can hold varies a lot depending on the radio. There are a lot of lists for digital contacts on the web and some are formatted directly for your radio so they can be loaded into the codeplug directly.

(Operating Procedures, PTT / Static connections in next month's GARzette)

The entire article is available on-line, see
http://www.gars.org/newsletters/2021_01_GARZETTE.pdf

Collins Gold Dust Twins

Vintage Amateur Radio

de Bill Shadid, W9MXQ



This month we will talk about the Collins Gold Dust Twins (abbreviated here as GDT). That refers to the 75A-4 Receiver and the KWS-1 Transmitter from 1955. “Gold Dust Twins” is a term used by hams relating to the station’s high price back at the time of its introduction. It applies to its resale value to this day. You will often hear me refer to Collins equipment as having “desk presence” and this set sure does keep to that promise. You will see that term come up in later article on Collins equipment and with some of its competitors from the 1950’s and 1960’s. Here is a complete station (temporarily missing only the matching speaker console) . . .



Left to Right are the KWS-1 Transmitter Power Supply (floor mounted in this installation), the KWS-1 Transmitter RF Unit, the temporary Speaker (more about this below, in the text), and the 75A-4 Receiver. You will also note the Ameritron ATB-15 Antenna Tuner on top of the Power Supply, the Astatic D-104 Microphone, an old set of Lincoln Headphones (“Cans”), and a Vibroplex “Bug” Keying Mechanism.

The above picture shows the station shut down right after a CW QSO with a station in the state of Washington. I was a bit humbled by my difficulty using the Bug (Semi-Automatic Keying Mechanism). I have gotten rusty on that process over the years – not to mention spoiled by today’s Iambic Keys and Keyers. The radio was putting out about 500 watts on 40 meters at the time.

To the Collins purest reader, the Bell and Howell Speaker is not the proper piece of equipment to be seen with this fine set. But, there are two Speaker Consoles that match this set that are part of this package – the Collins 270G-3 and the Collins 312A-1. Both are currently being restored for paint and trim by a fellow collector in California. Maybe they can appear in this column in an update. To be sure, the Bell and Howell speaker sounds great¹!!

The GDT work on the 80 through 10-meter bands, including 11-meters. At the time of this product being marketed, 11-meters was a ham band. The 75A-4 Receiver goes one better and covers 160 meters. There is a very large extended coverage area on every one of the band positions in support of wide use of the GDT units in MARS (Military Auxiliary Radio System), US and other embassies, and commercial applications of all sorts. These radios were found wherever high-frequency, high power communications were necessary.

The 75A-4 Receiver is a true gem. In many ways, it makes a good showing of itself even on today's band conditions. In fact, later retrofit mechanical filters make it better performing than when new. The sound and tuning are "smooth as silk" – a term hard to define but easily identified when heard. It uses 22 tubes to do its work. Most unique, at least in ham radio receivers of the day, was the Passband Tuning. This is a feature that Collins later abandoned for ham radio equipment until the very much later KWM-380 Transceiver. Unlike R. L. Drake's design for the same feature (many years later), the implementation was not electronic (in its initiation) but was mechanical. The turning of the Passband Tuning knob allowed simultaneous, and opposite, tuning of the VFO Frequency and the BFO (Beat Frequency Oscillator) to place the signal in a different location in the passband. That process was very effective in removing adjacent frequency QRM. To be sure, the VFO and the BFO are both electronic – but later implementations of this feature *electronically* tuned these two circuits. The internal mechanics of this process in the 75A-4 is very interesting to see. The result was impressive and at the same time rather remarkable for the time. Like some later Collins receivers, the 75A-4 included Rejection Tuning in its anti-QRM arsenal. "Rejection Tuning" is a Q-Multiplier that was very popular in many brands of receiver in those days. Versions of external Q-Multipliers (called many things) exist as accessories to this day. (Small note - in the GDT units, the VFO's are Permeably Tuned, or Inductive Tuned, Oscillators – better known as PTO's. Here we use "VFO" generically.)

The KWS-1 Transmitter could operate on SSB, CW, and AM modes. (It could also operate on RTTY by AFSK injection to the 600-ohm phone patch input.) Input power was 1,000 watts for SSB and CW for a 500 to 600-watt power output. For AM, loading was specified at just over 50% of SSB and CW values. Collins at the time unabashedly focused on SSB operation – a point that will come to light in later installments on the S-Line equipment introduced a few years later. In fact, well known was a slight issue on CW whereby a knowledgeable Collins Collector can notice a slight "whoop" in the CW signal, due to some power supply design issues. It is not objectionable – in fact, to collectors that I know, it identifies another KWS-1 on the air. I find that to be a personality trait to be cherished. The KWS-1 and its matching power supply weigh in at about 210 pounds. This is a true "boatanchor." (And, there were days during restoration when I thought being a boat anchor was the best use of this beast!) Added to the 35-pound weight of the 75A-4 Receiver we have a radio set approaching 250 pounds before including such things as a big antenna switching relay and some pretty heavy-duty interconnect cables.

A small, but interesting story about the CW signal "whoop" happened to me with my very first GDT set – with respect to the KWS-1 Transmitter. I had been working for days to get it working dependably. Finally, on the day things came together, I was testing the transmitter and seemed to get it working perfectly at 2:00 in the morning in a marathon work session. I sent a string of test transmissions on 15-meter CW. At 2:00 in the morning, who would expect anybody to hear me? Back comes a nearly immediate call from a ham in New Zealand with the message, "WA9MXQ, nice KWS-1." The "whoop" was the dead giveaway to another "Collins man" half way around the world that a KWS-1 was on the air! I went to bed that night a happy man! (WA9MXQ was my call in those days.)

Power was the name of the game for the KWS-1 Transmitter. It has a tube compliment of 31 with the final amplifier tubes being a pair 4CX-250B ceramic tetrodes (early versions used a pair of non-ceramic 4X-150A Tetrodes. The pair of 4CX-250B tubes allowed for a total dissipation of 500 watts (250 watts per tube). That allowed for a good safety margin for an SSB/CW transmitter running an input power of 1,000 watts in the intermittent modes used. The 300-watt total dissipation in the pair of 4X-150A tubes in early KWS-1 Transmitters was acceptable but was a bit short on overhead! It is my understanding that availability of the 4X-150A tubes drove the conversion to the 4CX-250B and not really an issue of power dissipation.

The KWS-1 in this article was problematic for many years through 3 owners (that I know about) – with me being the last (and current). The pair had the usual age-related problems and several problems that came right off the assembly line at Collins in Cedar Rapids, Iowa, or so I suspect. Perhaps the problem

took some years to become an issue. It took a total of four fellow Collins Collectors Association (CCA) members, including me, to get it running in the way it was designed in the 1950's.

This KWS-1 is my third – and is a part of my third complete GDT sets that I have owned. But, this is the first one that I did not do all the restoration on my own. KWS-1 transmitters take a lot of tender, loving care to get them running and keep them dependable. None of mine arrived in 100% working order. But, when done they certainly carry bragging rights. We have at least two GDT's in one local club to which I belong. And there are more club members that have just the 75A-4 Receiver. It is worth noting that my very first GDT sets came to me from a garbage dumpster – literally a true statement. It came as a part of a package that included the GDT set, two other 75A-4 Receivers, along with three complete Drake TR7 Transceivers with their matching RV7 Remote VFOs, MS7 Speakers, and PS7 Power Supplies. This is a long and involved story and is a part of a presentation I do for radio clubs on the Collins Gold Dust Twins.

The Gold Dust Twins set in this article is in my personal collection – and is here to stay. (Well, “never” is a long time when talking to a collector!) These radios came from my fellow collector of all brands of vintage ham radio equipment, Bob, W9DYQ, in one of our frequent trades.

Here is some GDT Trivia for those interested. These radios were gradually upgraded and improved through their market life cycle as with all products. Check this difference in the front of the 75A-4 Receiver . . .



Early 75A-4



Later 75A-4

- Note the Vernier Main Tuning Knob in the later receiver version.
- Upper right-hand knobs - the lettering is aligned in the later version.

These updates did not happen at the same time – plus, Collins offered an update kit to implement the Vernier Tuning Knob to older 75A-4 Receivers (and the KWS-1 Transmitter).

Also, early 75A-4 Receiver S-Meters had a red arc above S9.

The KWS-1 Transmitter also had some more minor differences in front panel switching as field feedback pushed some small changes. Most noticeable of these is the same update to the Vernier Main Tuning Knob on later units. Older KWS-1 Transmitters could be fitted with the Vernier Main Tuning Knob as a field update.

Not well known about the KWS-1 was a marketing dilemma faced by Collins at the time with respect to product offerings in the transmitter. Collins offered the 75A-4 Receiver (\$895 in 1955) and the KWS-1 (\$1,995 in 1955) models. For the first year or two they also offered a model KWS-1K that was delivered



without the high voltage power supply or the power amplifier tubes. In those days, many hams had AM Transmitters and Amplifiers with power supplies and power amplifier tubes they could adapt to SSB. I have never seen a KWS-1K but I have seen KWS-1's billed as "missing their power supply." I suspect those were KWS-1K radios separated from their home brew power supply. That assumption may be incorrect, however, as such a KWS-1K would have to have had a power output tube of some sort. Was this a way to offer the expensive transmitter broken into more affordable modules? A question whose answer is lost to time.

Early on, Collins referred to the KWS-1K as the Collins 32W-1 Exciter. Few, if any, of that actual model exists. It was slightly different in front panel layout (missing the right meter, for one thing). But that 32W-1 unit may well have acknowledged the unit as a stand-alone transmitter.

Another piece of trivia is that Collins first advertised the KWS-1 Transmitter as the 30L-1 Transmitter. As Collins aficionados know, that model number was later used in the popular desktop Linear Amplifier marketed with the S-Line Separates and the KWM-2 Transceiver. One story is that Art Collins wanted to showcase the "KW" (for power) and "S" (for Single Sideband) in the model number. But there are other logical reasons, also. The use of 30L-1 followed the model number nomenclature of the 30K-1 through 30K-5 Transmitters. The 30K simply became 30L. Another scenario is that the KWS-1 was a logical follow on from the KW-1 AM/CW Transmitter – with the KWS-1 including Single Sideband. Again, a question whose answer is lost to time!

And I appreciate that you read my articles. Remember that I am open to questions and comments at my email address, W9MXQ@TWC.com.

Notes:

¹ The elusive matching speaker for this radio – in the Collins 270G series – never did arrive here. Prices for these rare units are just too high for this writer. Today, the GDT pair here works quite well with an era correct National HRO-60TS Speaker Console replacing the Bell & Howell unit mentioned in the article.

The entire article is available on-line, see
http://www.gars.org/newsletters/2021_01_GARZETTE.pdf



The

GARzette

January 2021

GARS Membership**December New GARS Members**

Yusef Abd Al Rahman (KO4KHO)
David Bisciotti (KO4USA)
Lin Holcomb (NI4Y)
Adrienne Holcomb (W4FHL)
Eric Rice (KO4KOX)
David Thompson (K4JRB)
Jean Thompson

New Members: 7

**Total Members as of
January 1, 2021
326**

Join GARS members for our weekly
breakfast gathering at

7:30 AM most Saturdays

Now at

Cracker Barrel Restaurant
75 Celebration Dr.
Suwanee, GA 30024

January GARS Birthdays

Diane Andrus (KB4LWS)
Donald Brant (N2VGU)
Jolie Brown (KO4AHI)
Terry Cantrell (W4WTC)
Eliud Carmona
Rick Cobb (N4XYY)
Hal Collier (W4IGE)
Randy Collins (N4COR)
John Craig (KK4JXU)
Mark Fenley (KM4DJO)
Steve Jassen (KN4SVT)
Chuck Johnston (KN4JCN)
Ruth Jones (K4RHJ)
Denice Kludt
Wes Lindsey (W4CWL)
Kevin McClure (KF4HFN)
Antonio Perry (KN4AXM)
Grant Porter (KG4SDR)
Chad Sexton (KO4AXP)
David Thompson (K4JRB)
Newton White (N4EWT)
Ruth Willet (KM4LAO)

GARS MEMBERSHIP

Your current GARS membership status is shown in the monthly newsletter e-mail towards the bottom of the message.

To become a GARS member, or to renew your GARS membership, please visit our website—<http://www.gars.org>

To make changes to your GARS membership (moved, new e-mail address, new phone number, etc.), please e-mail the Membership Committee - membership@gars.org

You can renew or update your Amateur Radio license information with the FCC at their website for free
<http://wireless.fcc.gov/uls/index.htm?job=home>

To update your ARRL information, please visit their website - <http://www.arrl.org>

Membership Chair: Karen Albritton, KI4HPP

Committee Members: Dave Bruse, W4DTR, Pam Meridy, WB1AKQ

Repeater Status

6M Currently down
 147.075 Operational in Snellville
 147.255 Operational in Snellville
 224.580 Operational in Grayson
 442.100 Operational at Goshen Springs
 442.325 Operational in Buford
 444.525 Operational in Snellville
 Link remote receivers being added

Donating to GARS

Your GARS donation can be used for a certain purpose by donating to one of these funds:

- GARS SK Memorial Fund for Education (to remember and honor Silent Keys);
- GARS Scholarship Fund (Administered by the ARRL for awarding scholarships);
- GARS General Fund (any club purpose).

GARS has joined these rewards programs (a portion of every purchase you make through these merchants may be donated to GARS):

- Amazon Smiles;
- Kroger Community Rewards program.

For more information on how to sign up for these rewards programs, or to donate to GARS, visit

<http://gars.org/gars/donations-to-the-club>

GARS on Social Media



Discord Request:
<http://gars.org/discord>



Groups.io:
<http://gars.org/groups.io>



Visit GARS on Facebook:
<http://gars.org/facebook>








Follow GARS on Twitter:
<http://gars.org/twitter>

















Join GARS on YouTube:
<http://gars.org/youtube>





Officers

John Davis, President	WB4QDX	
Sandy Jackson, Vice President	KJ4DRO	
Joe Biddle, Secretary	AD4PZ	
Pam Meridy, Treasurer	WB1AKQ	
Randy Collins, Program Manager	N4COR	

Managers and Committee Chairs

Karen Albritton, Membership Chair	KI4HPP	
Dave Bruse, VE Team Leader	W4DTR	
David Adcock, Webmaster and Field Day Chair	KA4KKF	
Ralph Pickwick, Apparel Manager and Education Chair	KJ4CNC	
Glen Wendt, TechFest Chair	W3WWT	
Bob Hoffmann, GARzette Editor	K4CQO	
Eddie Foust, Repeater Chair	WD4JEM	
Mike Weathers, WAS / DXCC QSL Card Checker and Historian	ND4V	
Chuck McCord, Net Manager	KK4TKJ	
Steve Back, Technical / RFI Advisor	WB2OGY	
Joe Biddle, Winter Field Day Chair	AD4PZ	
Kyle Albritton, Multimedia Chair	W4KDA	
Don Stewart, Elmer Manager	KW4AL	
Dave Slotter, Georgia QSO Party Chair, Workshop Leader and Public Information Officer	W3DJS	

Directors and Trustees

Kyle Albritton, W4KDA		Rick Cobb, N4XY	
Mike Weathers, ND4V		Bill Cherepy, WB4WTN W4GR Trustee	



GARS Meeting Minutes

Gwinnett Amateur Radio Society – GENERAL Meeting Minutes

12/8/2020

(Covid-19 Alternative Online)

~~EAA Facility, 690 Hanger Rd. Lawrenceville, GA.~~

President John Davis (WB4QDX) opened the meeting at 7:00 pm and closed the meeting at 9:15 pm

Online participants: 59

Treasurer Report: Pam (WB1AKQ) presented the financial report.

Membership Report: John reported the Membership is at [318].

Programs – Randy (N4COR) upcoming programs were announced.

January – Lee Johnson (N4WYE) Nano VNA (Vector Network Analyzer)

February – John Kludt (K7SYS) – The 4-Year Amateur Radio Upgrade to ISS

March – Neil Foster (N4FN) – The Art of QSL'ing (or how I learned the hard way)

Workshop – Dave (W3DJS) announced the following upcoming Workshops:

December – Programming the 99 Memories of the IC-7300

Garzette – Bob (K4CQO) is looking for articles. He prefers Word format, but will take all.

GARS Holiday Party – Has been cancelled due to Covid.

Techfest 2021 – John (WB4QDX) announced the cancellation of the TechFest event for 2021 has been cancelled.

Technical Advisor *NEW* – Steve Back (WB2OGY) has accepted to step into this position from our beloved Silent Key, **Mike Swiderski (K4HBI)**

GARS OFFICERS – GARS will be accepting nominations for elected positions in the January and February General Meetings.

GARS HAM OF THE YEAR – Dave Bruse (W4DTR)

Just a few of Dave's volunteer involvements:

- GARS Discord setup
- Zoom meetings setup
- Membership committee
- Maintains the GARS Membership Database
- Active in Executive meetings
- Chaired several special events
- VE Team Leader for several years.

Fund Raiser (DogShow) – David (KA4KKF) mentions that we will have a Dog Show to work on **March 31st – April 4th**. Approximately ~15 volunteers will be needed.

Program – Dave W3DJS)

****Event dates** are recorded at the time of the General Meeting and subject to change.

Submitted by: **Joe Biddle (AD4PZ)** GARS Secretary

Gwinnett Amateur Radio Society Workshop Minutes

12/15/2020

Number in Attendance: 24

Workshop Topic: Programming the 99 Memories of the IC-7300

Presenter: Dave Slotter W3DJS

Brief Summary: Dave told us all about his adventures on finding FREE software to program the 99 memories of the IC-7300. For a complete write up see page 7 of the December 2020 GARzette article; [ICOM 7300 Memory Manager Review](#). Dave's memory file is posted to the GARS Groups in the Files > Icom IC-7300 folder > [W3DJS IC-7300 Memory](#) (to open this file you will need the 7300 Memory Manager software).

Door Prize Winners: Bill WR1TR and Steve WB2OGY - 10\$ HRO Gift Certificate.

Submitted by: Dallas N4DDM



Events – GARS and others

ARRL CONTESTING INFO	HAMFEST CALENDAR
<p>From ARRL Contest Calendar > For more information click the links <</p> <p>January 2021 1 Straight Key Night 2 Kid's Day 2-3 RTTY Roundup 16-18 January VHF Sweepstakes</p> <p>February 2021 8-12 School Club Roundup 20-21 International DX – CW</p> <p>March 2021 6-7 International DX– Phone</p> <p>April 2021 11 Rookie Roundup – Phone</p> <p>(no ARRL contests in May)</p> <p>June 2021 12-14 June VHF 19 Kid's Day 26-27 Field Day</p> <p>July 2021 10-11 IARU HF World Championship</p> <p>August 2021 7-8 222 MHz and Up Distance Contest 14-15 10 GHz & Up – Round 1 15 Rookie Roundup – RTTY</p> <p>September 2021 TBD EME - 2.3 GHz & Up 11-13 September VHF 18-19 10 GHz & Up - Round 2</p> <p>October 2021 18-22 School Club Roundup TBD EME - 50 to 1296 MHz</p> <p>November 2021 6-8 Nov. Sweepstakes - CW 20-21 Nov. Sweepstakes - Phone TBD EME - 50 to 1296 MHz</p> <p>December 2021 3-5 160 Meter 11-12 10 Meter 19 Rookie Roundup–CW 18-19 EME - 50 to 1296 MHz</p> <p>For more information: http://www.arrl.org/contest-calendar</p>	<p>[Please confirm the status of a Hamfest before making plans to attend. – Ed.]</p> <p>HAMFEST/CONVENTION 01/16/2021 - K4KDI WINTER TAILGATE 2021 Location: ORLANDO, FL Type: ARRL Hamfest Sponsor: SOUTH CONWAY BAPTIST CHURCH</p> <p>HAMFEST/CONVENTION 01/29/2021 - 01/31/2021 ARRL Puerto Rico State Convention Location: Hatillo, Puerto Rico, Type: ARRL Convention Sponsor: ARRL Puerto Rico Section, Caribbean Amateur Radio Group Website: http://www.arrlpr.org</p> <p>HAMFEST/CONVENTION 02/13/2021 - 02/14/2021 Online - Orlando HamCation Special Edition 2021 Location: Orlando, FL Type: ARRL Convention Sponsor: Orlando Amateur Radio Club Website: http://www.hamcation.com</p> <p>HAMFEST/CONVENTION 02/20/2021 - Brooksville Hamfest Location: Brooksville, FL Type: ARRL Hamfest Sponsor: Hernando County ARA Website: http://hcara.org</p> <p>HAMFEST/CONVENTION 02/26/2021 - 02/27/2021 7th Annual TECHCON - ARRL West Central Florida Section Technical Conference Location: Winter Haven, FL Type: ARRL Convention Sponsor: ARRL West Central Florida Section Website: http://arrlwcf.org/wcf-special-events/wcftechconference/ For more information: http://www.arrl.org/hamfests-and-conventions-calendar</p> <p>When searching by division, remember some states adjacent to GA are in different divisions: Southeastern: GA, AL, FL Delta: TN Roanoke: NC, SC</p>



GARS Events Calendar for 2021		GARS Recurring Calendar
TechFest Winter Field Day General HamCram Dog Show Fundraiser Georgia QSO Party North metro area Fox Hunt Memorial Day Parade ARC/KARC Hamfest Field Day Tech HamCrams JOTA Maker Faire Stone Mt. Hamfest Holiday Party	Canceled for 2021 January 30-31 2021 TBD April 1-4 2021 April 10-11 2021 April 2021 May 31 2021 TBD June 26-27 2021 TBD October 16-17 2021 TBD November 6-7 2021 December 14 2021	<ul style="list-style-type: none"> • 2nd Tuesday of the month at 7 pm (except December): Monthly Club Meeting (online until further notice) • 3rd Tuesday of the month at 7 pm (except December): Monthly Workshop (online until further notice) • 2nd Sunday of the Month at 2 pm (suspended until further notice): GARS Ham Exam Session Fire Station #24 2735 Mall of Georgia Blvd Buford, GA 30519 • Every Monday at 7:30 pm: GARS Want, Swap, Sell, and Information Net on the GARS 147.075 MHz repeater • Every Monday at 8:30 pm: ARES Training on the GARS 147.075 MHz repeater • Most Saturdays at 7:30 am : GARS Weekly Breakfast Cracker Barrel Restaurant 75 Celebration Dr., Suwanee, GA 30024
	GARS CALENDAR FOR January 2021	

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1 *** 2021 ***	2 Breakfast at Cracker Barrel in Suwanee 7:30 AM
3 GARS VE Exam Session (Cancelled)	4 7:30 – 8:00 PM GARS 2M Net	5 7:00 – 8:00 PM GARS Exec Meeting (Online)	6	7	8	9 Breakfast at Cracker Barrel in Suwanee 7:30 AM
10	11 7:30 – 8:00 PM GARS 2M Net	12 7:00 – 8:00 PM GARS Meeting (Online)	13	14	15	16 Breakfast at Cracker Barrel in Suwanee 7:30 AM
17	18 7:30 – 8:00 PM GARS 2M Net	19 7:00 – 8:00 PM GARS Workshop (Online)	20	21	22	23 Breakfast at Cracker Barrel in Suwanee 7:30 AM
24	25 7:30 – 8:00 PM GARS 2M Net	26	27	28	29	30 Breakfast at Cracker Barrel in Suwanee 7:30 AM
31						



Active VE Testing Sessions

On-Line Testing at hamstudy.org

So you want to take a remote exam...

If you read our recent press release then you already know about the group that grew up to take on this new challenge and it has been our privilege to provide the software that nearly all of them use.

To find an exam session, go to <https://ham.study/sessions/online>

Cherokee Amateur Radio Society

We may only be able to accommodate a few simultaneous tests so we can maintain the safety of everyone. We recommend highly that you register if you want to be accommodated.

Register with John Reynolds (VEC) W4TXA

Phone: (770) 715-9640

Email: wx4txa.john@gmail.com

Where: Cherokee County Charter Academy. 2126 Sixes Road, Canton GA, 30114 (We will be outside, under cover sidewalk, West/Left side of Building)

Time : 1:00PM (1300 - 1430) on January 9th, 2021, see <https://www.wx4car.org/testing2021.html>

Testing will be outdoors, but requires the wearing of a mask to keep everyone safe.

For more information, please visit their website at <https://www.wx4car.org/>

Stephens County Amateur Radio Society

VE session (date TBD) from 1 till 4 pm in Lavonia GA at 1240 E. Main St, at the white gazebo. [Lavonia, GA is off I-85 near the Georgia / North Carolina border... - Ed.]

If you need to test please get a hold of us at (kr4cw1@gmail.com.) We are working on a 2nd test session , if you would like to be a part of it please send us a contact email to club email and will be glad to help you on the prelist of this....

We will be giving All Tests (Tech, General, Extra) Cost will be \$15.00 must have ID and copy of License, if you're upgrading...if it's your first time taking a test please go to the FCC website and sign up for a FRN number and create your Account. Here is the link to get started: <https://apps.fcc.gov/coresWeb/regEntityType.do>

Please make sure you print this off and bring with you, so you will have your FRN number. Without this we cannot submit your test.

Source: <http://www.sc-ars.org/>

Local VE Sessions & Meetings

Local VE Testing

[Please check with each session contact for current status.—Ed.]

GARS publishes Metro Atlanta VE exam schedules as a service and is not responsible for errors or changes. Call and confirm schedules before going. All sessions are walk-in, unless otherwise noted. Take copies of current license and certificate of completed elements with you to all sessions. Find additional sessions online at <http://www.arrl-ga.org>

First Sunday, ODD Months

2 pm (Jan, Mar, May, Jul, Sep, & Nov)

VEC: WCARS

Braselton Public Utility Building

4986 Highway 53, Braselton, GA

Contact: Nat Christman K4VQ, 678-371-7103

christmans30680@gmail.com

First Sunday, EVEN Months

2 pm (Feb, Apr, Jun, Aug, Oct, Dec)

VEC: WCARS

Hall County EOC

470 Crescent Dr. Gainesville, Ga.

Contact: Perry Roper, KO4RD

(770) 536-3056

Second Saturday

10:00 AM

Alpharetta North Park, Adult Activities Center

13450 Cogburn Rd, Alpharetta, GA 30004

Contact: Ian Kahn, KM4IK

E-mail: km4ik.ian@gmail.com

Third Saturday, ODD Months

VEC: ARRL

9:30 am (Walk-ins welcome)

Stone Mountain Masonic Lodge

840 VFW Drive

Stone Mountain, GA 30083

Contact: Frank Haynes, KV4SP

Email: fhaynes@vatmom.net

(678) 467-3712

First Sunday, EVEN Months

VEC: WCARS and W5YI

2 pm @ Barrow Co. Emerg. Serv. Bldg

66 McElroy Street

Winder, GA 30680

Contact: Mike Wolcott, W4WYI

(404) 281-6581

E-mail: W4WYI@ARRL.net

Fourth Tuesday

ARRL VEC

7 pm @ United Way Service Center

6279 Fairburn Rd., Douglasville

Contact: Jessie Clower, KB4WFK

(770) 942-6466

Fourth Sunday

2:30 pm Georgia Tech

VanLeer Elec. Building

Rm. W218, 777 Atlantic Dr.

For more information go to www.w4aql.com and click on "Test Sessions"

GARS VE Testing

Second Sunday

VEC: W5YI

2 pm

Fire Station #24

Mall of Georgia Boulevard

Buford, GA 30519

Contact: Dave Bruse, W4DTR

E-mail: exams@gars.org

(Suspended until further notice)

November GARS Results

No GARS VE Session.

[Other local clubs are starting to hold limited VE sessions. See the articles on page 21 in this issue of the GARzette for more details. —Ed.]

GARS VE Team Leaders

E-mail: exams@gars.org

GARS VE Website:

<http://gars.org/exams>



Local Meetings

[Please check with each club for meeting schedule and method (online, etc.) - Ed.]

First Tuesday

Kennehoochee ARC

Fire Station #1, Training Room

112 Haynes Street, Marietta, GA

Meeting begins at 7:00pm

Talk In 146.880(-)

First Thursday

Atlanta Radio Club

Georgia Red Cross HQ

1955 Monroe Dr., Atlanta, GA

Meeting is at 7:30pm

Talk In -146.820(-)

N.E. Georgia ARC

Commerce Public Library

1344 South Broad Street, Commerce, GA

Meeting is at 6:30pm

Talk In - 147.225(+), PL 123.0

Second Monday

Georgia Tech ARC

Room W218

Van Leer Electrical Engineering Bldg.

Georgia Tech Campus

Meeting at 7:00pm

Sawnee Amateur Radio Association

Beaver Toyota

1875 Buford Highway, Cumming, GA

Meeting at 6:30

Second Thursday

Alford Memorial Radio Club

Annistown Road Baptist Church

Annistown Rd & Spain Rd

Stone Mountain, GA

Dinner at 6:00pm, Meeting at 7:30pm

Talk In - 146.760(-)

Second Saturday

North GA QRP Club

Board Room of The Shepherd Center

2020 Peachtree Rd, NW, Atlanta, GA

at 10:00 AM

Third Tuesday

North Fulton Amateur Radio League

Alpharetta Recreation & Parks Dept.

Alpharetta Adult Activity Center

13450 Cogburn Road, Alpharetta, GA

meeting at 7:30pm

Talk In - 145.47(-)

For more information, go to:

<http://www.gars.org/>

GARS Supporters

Serving You From Coast to Coast and Around the World



**Order Toll-Free From a Location Near You
Or Take Advantage of Secure 24-Hour Ordering:**

<http://www.hamradio.com>



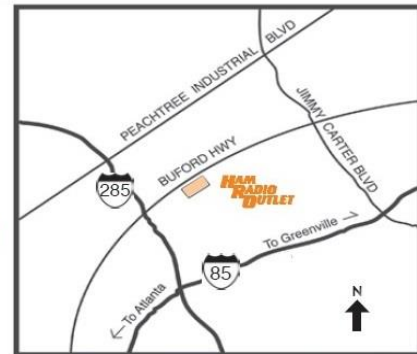
If your closest 800 number is busy, please call one of our other numbers.

Phone Hours: 9:30 am to 5:30 pm Monday – Saturday

All Stores Open 10am - 5:30pm Monday - Saturday

24-Hour FAX Order Lines at all Store Locations

Ham Radio Outlet App available at:



ATLANTA, GA 30340

6071 Buford Hwy, Doraville

1 mile north of I-285

(770) 263-0700

(800) 444-7927

24 Hour FAX (770) 263-9548

Email: atlanta@hamradio.com

Toll Free Numbers:

Northeast (800) 644-4476

West (800) 854-6046

Southeast (800) 444-7927

Mountain (800) 444-9476

Mid-Atlantic (800) 444-4799

New England (800) 444-0047

Manager:

Mark KJ4VO

Assistant Mgr:

James KK4WNN

David AI4XL

Denise

Ken KI4BQS

Ray WN5FB

Koz KD3GC



[Note: HRO is now open to walk in traffic on a limited basis at all locations. - Ed.]

**INTERBOROREFRIGERATION
HVAC/R**

Reparation & Maintenance

Luis Castellanos
owner

Address: 470 Bay lake pass,
Lawrenceville, GA 30046

Tel.: 610-816-8744
Email: el-piloto52@hotmail.com

Licensed by E.F.A

Central A/C - Heater and Water Heater
All Commercial Refrigeration Systems
Ice Cream Freezer
All Jobs Guaranteed

30 years of Experience

Finally
A clog-free gutter
with no fine print.

The Real GUTTER PROTECTOR
NO CLOGS, NO OVERSHOOT, GUARANTEED.

You'll never have to clean your gutters again.
The Real Gutter Protector's Waterloov®
System uses a patented design that slows
water more effectively and draws water in

Real Estate Broker

**Century 21
21 Results Realty**

SHARON ADCOCK
CRS, GRI, e-Pro,
Relocation Expert,
Associate Broker

www.SharonAdcock.com
2920 Ronald Reagan Blvd
Cumming, GA 30041

Buying*Selling*Investing
For Any Real Estate
Matters

There has never been a
better time to invest in Real
Estate

**Inventory is LOW
It's a Seller's Market**

Sharon@
SharonAdcock.com
Cell: 404-428-9127
eFax 678-679-1383

Not intended